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## **REMARKS / ARGUMENTS**

With this Amendment, Claims 15, and 17-30 remain in this application. Claims 16, and 31-33 are now cancelled. Claims 1-14, and 31-38 were previously cancelled.

Applicants have cancelled the three claims that had been identified by Applicants as claims 31, 32 and 33 in paper 4 (July 2002 Response and Amendment) and paper 6 (November 2002 Supplemental Amendment). Applicants had inadvertently reused these unavailable claim numbers, and apologizes for any confusion that this may have caused.

### **Allowable Subject Matter**

Applicants gratefully acknowledge the indication at page 14 of the Office Action that claims 25, 26, and 30 are free of the prior art, and have amended them accordingly to overcome the rejections under 35 U.S.C. § 112. These amendments were made as suggested by the Examiner, and no significant broadening of these claims has occurred. Thus, Applicants respectfully submit that claims 25, 26, and 30 are allowable.

### **Claim Rejections Under 35 U.S.C. § 112**

Claims 15, 17, 19, 20, and 24-30 have been amended as the Examiner suggested, in order to overcome the numerous 35 U.S.C. § 112 rejections, as identified in pages 10-13 of the Office Action.

Applicants would like to thank the Examiner for making these amendment suggestions.

### **Claim Rejections Under 35 U.S.C. § 102**

#### **Olausson et al '817**

Claims 15-18 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Olausson et al '817. Applicants respectfully submit that claims 15-18 are not anticipated by Olausson et al '817, as Olausson et al '817 does not disclose or suggest each feature of the present invention.

The Examiner notes that Olausson et al '817 "discloses a method for increasing the throughput of a recovery boiler by improving the reaction conditions within the boiler [see column 2, lines 2-4], the method comprising the steps of injecting air (which inherently includes oxygen) at least at the secondary level 8 and the tertiary air level 10."

Olausson et al '817 discloses the use of air that is blown in through certain ports at a higher pressure than other ports. Olausson et al '817 discloses a novel way of introducing **excess air** (i.e. above the stoichiometric requirement), but *neither teaches nor suggests* the injection of **additional oxygen** to enrich the combustion air. In contrast, the present claimed invention is focused with increasing the net oxygen content of the combustion mix, and thereby increasing the throughput and efficiency of the recovery boiler, without the associated increase in the flue gas necessitated by the nitrogen and other non-combustible components contained in air.

Claim 15 requires a method comprising "injecting oxygen" at various air injection levels. The terms 'oxygen' and 'air' are understood as having the ordinary meanings attributed to them. If there is any perceived ambiguity relating to the meaning that should be attributed to the term 'oxygen', it is clear from the body of the specification that the intention is to inject a gas that has an **oxygen** content that is **higher than air** into these air injection levels, with the intention to reduce emissions, increase throughput, increase efficiency, etc. One of ordinary skill in the art would find that Olausson et al '817 neither teaches nor suggests the invention of claim 15.

Claim 16 has been cancelled, thereby rendering this objection moot.

Claim 17 and claim 18 both explicitly require that the oxygen content at the air injection levels be greater than the atmospheric concentration of 21%. In contrast, Olausson et al '817 only specifies the use of air as an oxidant, and is therefore believed that the basis for this rejection deserves reconsideration, in light of this distinction.

### **Uppstu '895**

Claims 15-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Uppstu '895. Applicants respectfully submit that claims 15-24 are not anticipated by Uppstu '895, as Uppstu '895 does not disclose or suggest each feature of the present invention.

The Examiner notes that Uppstu '895 "discloses a method for increasing the throughput of a recovery boiler by intensifying the combustion process within the boiler [see column 1, lines 13-15], the method comprising the steps of injecting an oxygen-containing gas (such as air) in somewhat more than stoichiometric amounts [see column 1, lines 30-34] ..."

Uppstu '895 discloses the use of air that is injected through a vertical row of ports. Uppstu '895 discloses a novel way of introducing excess air (i.e. above the stoichiometric requirement), but neither teaches nor suggests the injection of additional oxygen to enrich the combustion air. In contrast, the present invention is concerned with **increasing the net oxygen content** of the combustion mix,

and thereby increasing the throughput and efficiency of the recovery boiler, without the associated increase in the flue gas necessitated by the nitrogen and other non-combustible components contained in air.

Claim 15 and claim 20 require a method comprising injecting "oxygen" at various air injection levels. Claim 19 requires a method comprising "applying oxygen enrichment" to various air injection levels. The terms 'oxygen' and 'air' are understood as having the ordinary meanings attributed to them. If there is any perceived ambiguity relating to the meaning that should be attributed to the term 'oxygen', it is clear from the body of the specification that the intention is to inject a gas that has an **oxygen** content that is *higher than air* into these air injection levels, with the intention to reduce emissions, increase throughput, increase efficiency, etc.. One of ordinary skill in the art would find that Uppstu '895 neither teaches nor suggest the invention disclosed in either claims 15, 19, or 20.

Claim 16 has been cancelled, thereby rendering this objection moot.

Claims 17, 18, and 21-24 all explicitly require that the oxygen content at the air injection levels be greater than the atmospheric concentration of 21%. In contrast, Uppstu '895 only specifies the use of "an oxygen-containing gas", which is defined as being either "air, odorous gases, or flue gas" (column 1, lines 11

through 13) air as an oxidant, and is therefore believed that the basis for this rejection deserves reconsideration.

**Leffler et al '950**

Claims 27-29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Leffler et al '950. Applicants respectfully submit that claims 27-29 are not anticipated by Leffler et al '950, as Leffler et al '950 does not disclose or suggest each feature of the present invention.

The Examiner notes that Leffler et al '950 "discloses a method for improving combustion stability and efficiency, the method comprising the steps of supplying air flows (which inherently include oxygen) to the various air injection levels, including the primary air injection level 20 and the secondary air injection level 24, sensing the sulfur dioxide concentration in the flue gas or exhaust 32 via sensor 34, and adjusting the air (and oxygen) flow to the respective air injection levels 20 and 24 in order to minimize the sulfur dioxide emissions."

Leffler et al '950 neither teaches nor suggests the injection of additional **oxygen** to modulate the amount of undesirable combustion products.

Claims 27 and 28 of the present invention require a method comprising supplying "oxygen flows" at various air injection levels. Claim 29 is dependent on claim 28, and further requires that the "oxygen enrichment concentration" be

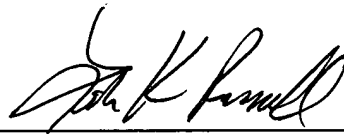
controlled independently for each air injection level. The terms 'oxygen' and 'air' are understood as having the ordinary meanings attributed to them. If there is any perceived ambiguity relating to the meaning that should be attributed to the term 'oxygen', it is clear from the body of the specification that the intention is to inject a gas that has an **oxygen** content that is ***higher than air*** into these air injection levels, with the intention to reduce emissions, increase throughput, increase efficiency, etc. One of ordinary skill in the art would find that Leffler et al '950 neither teaches nor suggest the invention of claims 27 through 29.

## CONCLUSION

In view of the current amendments, the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited.

Should the Examiner believe that a telephone call would expedite prosecution of the application, he is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,



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Stacy Forte